EU Framework Program for Research and Innovation (WATER-4a-2014 - H2020)

Project Nr: 641821

Applying European market leadership to river basin networks and spreading of innovation on water ICT models, tools and data.

Deliverable D8.2
Scheldt virtual marketplace experiment report

Version 1.1

Due date of deliverable: 30/11/2016
Actual submission date: 13/12/2016

Document control page				
Title	DL 8.2 Scheldt virtual marketplace experiment report			
Creator	EP_ANTEA			
Editor	EP_ANTEA			
Description	This report explains the involvement and interaction of the Scheldt stakeholders in the development of the project. This collaboration includes interviews, giving input on the design of the marketplace, attendance to stakeholders meetings and e-pitch event as well as input to the e-learning and the interoperability experiment. The case studies were developed to test and guide a number of different actions during the course of the project, nonetheless, the parallel dialogue and knowledge transfer between Maritza and Scheldt stakeholders has added value both to the case studies and the project itself.			
Publisher	WaterInnEU Consortium			
Contributors	WaterInnEU Partners			
Type	Text			
Format	MS-Word			
Language	EN-GB			
Creation date	14/11/2016			
Version number	1.1			
Version date	05/07/2017			
Last modified by	EP_CREAF			
Rights	Copyright © 2016, WaterInnEU Consortium			
Dissemination level		CO (confidential, only for members of the consortium)		
	X	PU (public)		
		PP (restricted to other programme participants)		
		RE (restricted to a group specified by the consortium)		
	When restricted, access granted to:			
Nature	X	R (report)		
		P (prototype)		
		D (demonstrator)		
		O (other)		
Review status		Draft	*Where applicable:*	
	X	WP leader accepted		Accepted by the PTB
		PMB quality controlled		Accepted by the PTB as public document
	X	Coordinator accepted		
Action requested		to be revised by all WaterInnEU partners		
		for approval of the WP leader		
		for approval of the PMB		
		for approval of the Project Coordinator		
		for approval of the PTB		

Requested deadline	

Revision history			
Version	Date	Modified by	Comments
0.1	14-11-2016	EP_ANTEA	Created the basic content of the deliverable
0.2	25-11-2016	JK_ORION	Input and improvements
0.3	07-12-2016	EP_ANTEA	Improvements
0.4	08-12-2016	AC_ORION	Improvements
0.5	12-12-2016	EM_TUDELFT	Input
0.6	13-12-2016	EP_ANTEA	Final details
1.0	13-12-2016	LP_CREAF	Last minor changes
1.1	05-07-2017	EP_CREAF	Modifications regarding the protection of personal data

Table of Contents

Scheldt case study

The case studies were developed to test and guide a number of different actions during the course of the project, specifically from WP 5, 6 and 7: the interoperability experiment, the Marketplace itself and the e-learning.

The idea was to choose two transboundary river basins in Europe with some similarities, to learn from each other, but also with some differences, to have a wider range of challenges and potential solutions. The purpose was to use these examples to demonstrate how the outputs from the project could be best tailored to address the specific and practical needs of River Basin Managers and their stakeholders.

Deliverable 8.1 presents the outcomes and insights generated from the Maritsa Case Study. The activities carried out within the Scheldt case study are described in the sections that follow below.

1.1. Background

The river Scheldt has a length of 355 km from source to mouth. The source is situated in the north of France (St. Quentin) about 110 m above sea level and the river flows through Belgium and into the North Sea near Vlissingen (The Netherlands). The total catchment area is approximately 21.863 km2.

The Scheldt estuary has always had considerable commercial and strategic importance. Furthermore, the basin has been the scenery for many battles throughout history.

Currently, about 10 million people (477 inhabitants per km2) live in the river basin. Additionally, the river is an important waterway, navigable most of its way, and hosts the second port of Europe, the Port of Antwerp. The Scheldt is a typical rain fed lowland-river that faces different challenges that will be discussed in the following sections.

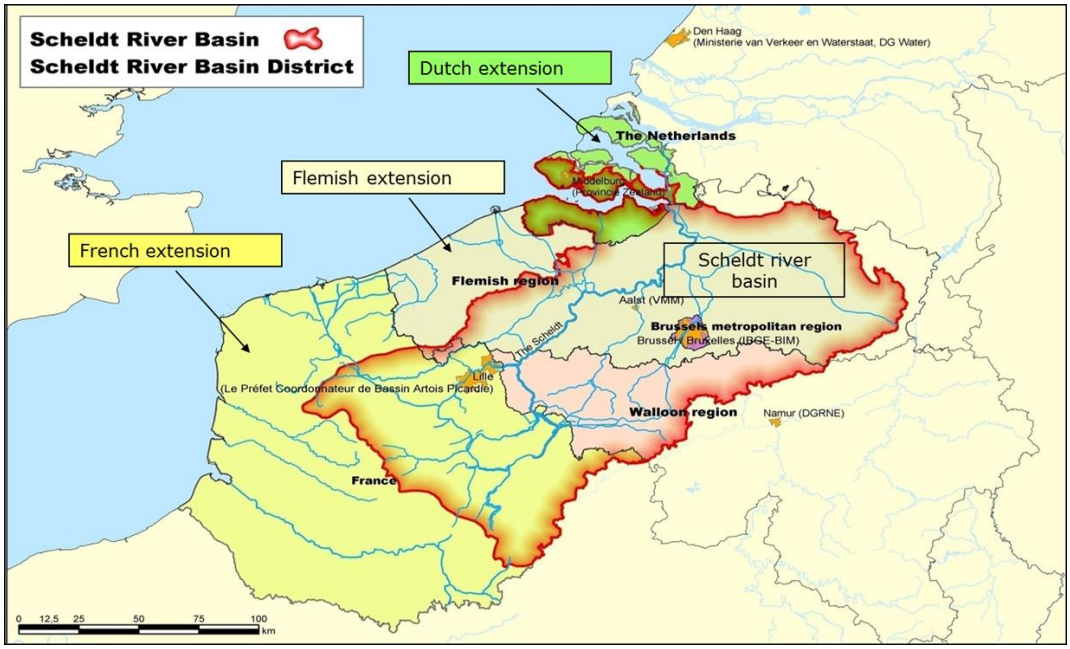

Figure 1: Scheldt river basin

1.2. Scheldt stakeholders

At the outset of the project, a long list of stakeholders was elaborated in order to identify the different institutions involved in river basin management in the different regions of the Scheldt river basin.

This included a total of 29 institutions, 34 if the different departments are included, mostly from Belgium but taking into account the French and Dutch partners as well. In total, 42 people have been contacted, at various points, regarding this project:

Institution	Position
Coordination Committee for International Environmental Policy (CCIEP)	
International Scheldt Commission (ISC - CIE)	Secretary General
Flemish-Dutch Scheldt Commission (VNSC)	Environment Project Coordinator for the Flemish Government Maritime Access Department
Coordination Committee on Integrated Water Policy (CIW) - Flemish region	
VMM - Flemish Environment Agency (Flanders)	Senior Engineer Water Related Topics
DGRNE - General Direction of Natural Resources and Environment (Wallonia)	Attaché in charge of relations DGO3 / DGO4; Communication Manager; Expert DGO3 - DCENN
IBGE - Brussels Institute for Environmental Management (Brussels Region)	Hydrologic Engineer
Antwerp Province	Director integrated water policy service, Environment project responsible, Policy advisor Lower Scheldt, Project engineer water policy service
VMM – AOW – Groundwater Service	Head of integrated water policy, Groundwater project responsible
VMM - Department operational water management	Head of Flood Management
VMM / Integrated Water Management Coordination Commission (CIW)	Secretariat coordination committee integrated water policy

W&Z: Waterways and Sea Channels	
De Scheepvaart (Shipping)	Head of Department Water Ways Management
Department of Maritime Access (aMT)	Head of Department aTM
Union of Flemish Cities and Municipalities	Executive Water Policy
Water utilities - Flanders	
Pidpa (Provincial and Intercommunity drinking water society of the Antwerp Province)	Sewage GIS
MOW, Flanders Hydraulics Laboratory	Head of Deparment Flanders Hydraulics Research, Researcher Flanders Hydraulics Research
MOW, Department Port and Water Policy	Head of department port and water policy
MOW, Predictions	Project Engineer
East Flanders Province	Subcatchments coordinator
Scheldt (Escaut) RBD	Contract coordinator Scheldt River
CR Dender	Coordinator Dender River
CR Dyle - Gette	Coordinator Dyle-Gette River
CR Haine	Coordinator Haine River
Seine RBD	Senne River Basin Sub-Basin River Contract
International Hydrographic District	Public Service Officer of Wallonia DGARNE – DEE
SPGE - Public Company for Water Management (Wallonia)	Strategy and Development Advisor
IPALLE	Responsible of Projects
IGRETEC	Director of Operation of the Purification and Discharge Works
Wallon Company of Water	
Ministry of Environment - Brussels Region	Head of Department - Environment
SBGE - Brussels Water Management Company	
Hydrobru (Water utilities) - Brussels Region	General Director

1.3. Interaction

After consultation with different stakeholders, either through stakeholders meetings, face to face/phone interviews or direct communication, the main challenges in the basin were defined as follows:

- **Difficult international governance:** the Scheldt flows through 6 district authorities: 3 states (France, Belgium and The Netherlands) and 3 regions (Wallonia, Brussels and Flanders) which implies a complex political context with different languages, different cultures and different economic development. While relations between the countries and regions are generally good, there have been serious tensions concerning for instance the deepening of the estuary (Flanders- the Netherlands).
- **Pollution:** high population density, intensive agriculture, old industrial and urban structure make the Scheldt basin especially vulnerable to contamination.
- **Climate change:** sea level rise, flooding, combined sewer overflow, water scarcity erosion and change of diversity are some of the major challenges that river basin managers in the Scheldt area need to tackle.

a. Input to design of the Marketplace

The need for tools to manage the different afore-mentioned challenges was a common demand amongst the stakeholders, however their ability to identify these was identified as being difficult.

In general terms, the main issues that the stakeholders pointed out regarding their current attempts for the identification and selection of tools were:

- There is too much information available (internet) that is difficult to screen and prioritise
- Need to shortlist interesting tools to finally select the most appropriate
- Difficulty in accessing open source and freeware of good quality
- Lack of good quality and easy to use e-learning (ideally graphical, not too much text)
- Insufficient support in the selection and use of tools
- Paucity of information relating to sharing of experience, not only successes but also failures.

The WaterInnEU project is addressing these concerns via the development of the virtual Marketplace itself, and via a number of matchmaking events to accelerate the access to high quality, pre-screened information. The above insights have been invaluable inputs into the design and development of these mechanisms to best meet the needs of the end users.

For example, the Marketplace has been designed to facilitate access to good quality and relevant product information in a number of ways:

1. Only products that have been pre-screened by the WaterInnEU partners are uploaded onto the platform, limiting the amount of ‘noise’ in the system and ensuring only good quality products are available to the end users.
2. Product specific information is presented in a structured and streamlined way such that the most relevant data is readily available.
3. Via automatic matching between product owners and end users, and third party (such as consultants) who can offer implementation support to bridge the gap between these two communities. Marketplace users can upload the support they are seeking, or the services they are offering. Other users can search for and respond to these service requests and offers, and sign up to alerts for continuous updates on new entries.

4. Via access to expert support, which includes identification of an appropriate product, and accessing the right type of support organisations (for end users) and improved / targeted dissemination and development of E-learning materials (for developers).
5. Via alerts which provide continuous updates on new service requests and offers as they are added to the Marketplace.

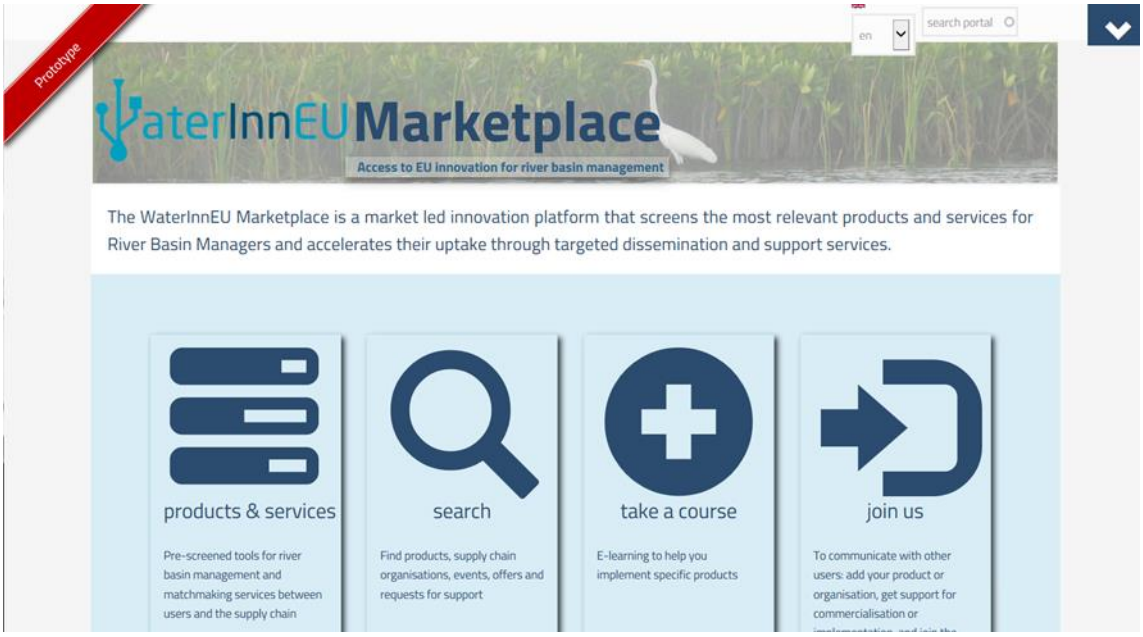

Figure 2: Screenshot of the virtual Marketplace

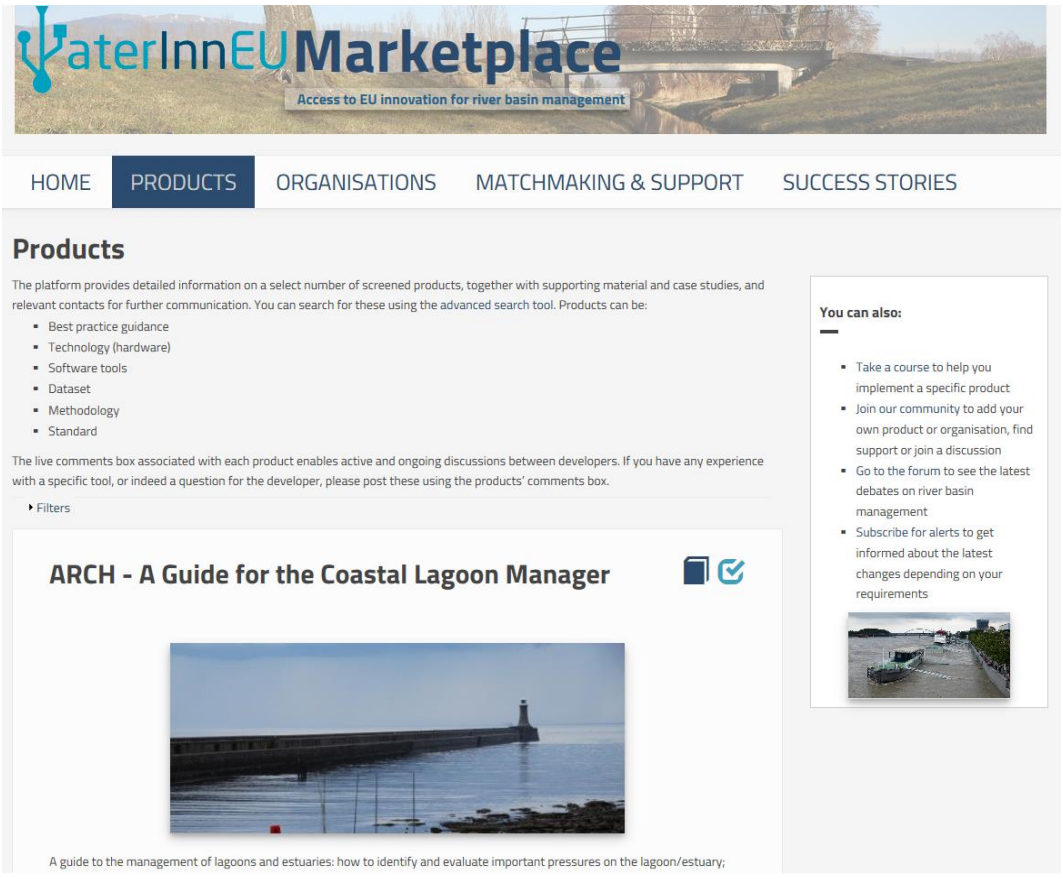

Figure 3: Screenshot of the Products page in the Marketplace

b. Input to design of matchmaking mechanisms

As described in Deliverable 4.2 Project Integration, there have also been a series of specific matchmaking events to identify challenges and present potential solutions to targeted end users within the two Case Study areas, specifically:

- **Stakeholders meetings:** the first one in Antwerp, Belgium in July 2015 and the second one in Plovdiv, Bulgaria in September 2016
- **E-pitching events:** one in November 2016 and one foreseen for January 2017 (also open to end users from outside the Case Study areas).
- **One to one Stakeholder Interviews:** first to understand the needs of end users (WP3), then to propose solutions (WP4) and finally to learn about the pertinence and efficiency of these matchmaking efforts (WP8).

These matchmaking events helped both to test the functionality of the marketplace and match the tools to the people who need them. The Scheldt stakeholders participated in all activities and provided practical feedback on all aspects.

Figure 4: Scheldt and Maritza stakeholders in the splinter sessions of the WaterInnEU First Stakeholders Meeting held in Antwerp, Belgium on the 1st of July 2015

Figure 5: Maritza and Scheldt stakeholders in the Second WaterInnEU Stakeholders Meeting held in Plovdiv, Bulgaria on the 20th of September 2016.

Figure 6: Screenshot of the first e-pitching event, held on the 2nd of November 2016 where 4 products were presented to the general public, including some Scheldt and Maritza stakeholders.

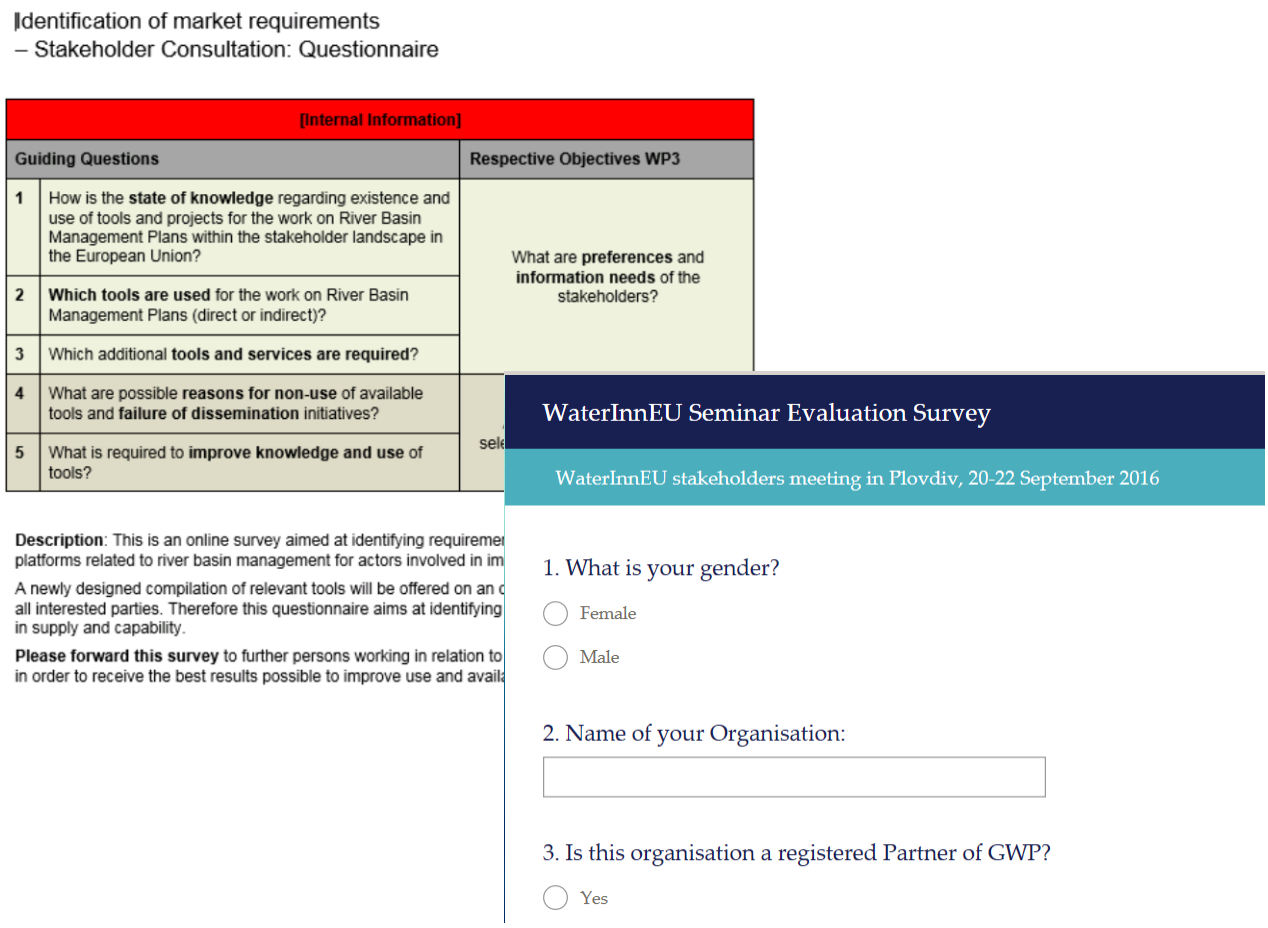

Figure 7: Screenshots of different questionnaires and surveys conducted with stakeholders

Resulting Product Matches

Throughout the project, the WaterInnEU team has focussed on finding solutions to the different challenges described, from tools and guidance extracted from past and ongoing EU funded projects. Some examples of products that were identified to be of relevance to the Scheldt river basin, are:

- Difficult international governance: best practices and case studies of stakeholder inclusion, consultation and participation, such as the ARCH guidance document.
- Pollution: identifying and analysing different types of pollution, such as the highly successful WEISS tool.
- Climate change: different solutions for climate change related challenges, for example, LISFLOOD for flooding, ADESBA for combined sewer overflow, Aquifer Storage and Recovery for water scarcity, and GUIDOS for changes in biodiversity.

The relevant partners within Scheldt are following up with the owners of these products as appropriate, supported by the relevant WaterInnEU Account Managers.

c. Input to design of E-learning

Some of the E-learning materials developed under the project have aimed at targeting the concerns, interests and needs of the Scheldt stakeholders (mentioned in the previous sections), specifically in regard to the products WEISS and GUIDOS. Multimedia products, tutorials and participative platforms have been developed and are being linked to the Marketplace via the products, the forum and the e-learning platform itself. More information on the e-learning platform can be found in DL 7.3 E-learning platform.

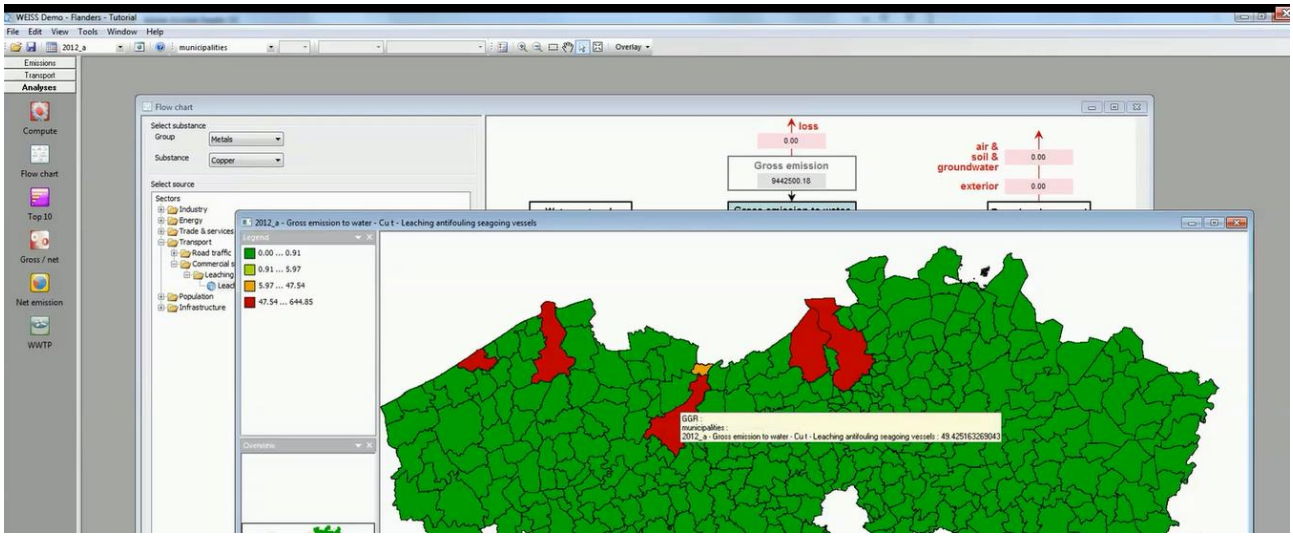

Figure 8: Screenshot of the WEISS e-learning

d. Dialogue and knowledge transfer between Scheldt/Maritza basins

The two stakeholder meetings have also been highly effective in enabling exchange of information between two very different river basins.

During the **first stakeholders meeting**, held in Antwerp, Belgium on the 1st of July 2015, the main topics discussed were:

- Implementation of Art.4(7) of WFD: examples for surface water bodies (SWB) and groundwater bodies (GWB); criteria for overriding public interest and benefits to society; examples for justification in the RBMP - case studies
- Implementation of the Floods Directive
- International governance and organization of the International Scheldt Commission.

The **second stakeholders meeting**, organised between Scheldt and Maritsa experts in the East Aegean River Basin Directorate was held on the 21 September 2016 in Plovdiv. The following topics were discussed:

- Methodology for evaluation of hydro-morphological status as part of the ecological status of surface waters, including quantitative status.
- Methodology for assessing the chemical status of surface water incl. bio-accumulation in fishes.
- Methodology for evaluation of quantitative status of groundwater.
- Evaluation of diffuse pollution.
- Coordination of River Basin Management Plan and Flood Risk Management Plan between the countries (parties) of Scheldt River Basin.
- Approaches to assessing the risk of flooding and coordination of measures in a transboundary context.

Feedback from the two stakeholder communities was that this exchange of information was very useful, particularly for the Maritsa team who were able to learn from the previous challenges faced in Scheldt.

e. Input into the Interoperability experiment

The interoperability experiment (WP5) aimed to test and analyse harmonization and standardization methodologies within a specific (flooding) scenario. The Scheldt case study contributed to this interoperability study.

A hydrological dataset has been provided by the Flemish Water Management in WaterML 2.0 format. The way to access this data as an automatic process is a non OGC interoperable service. This means that a manual downloading process from the WaterInfo portal[1] (see Figure) is needed to integrate this database into the present architecture in an interoperable service.

[1] http://www.waterinfo.be/

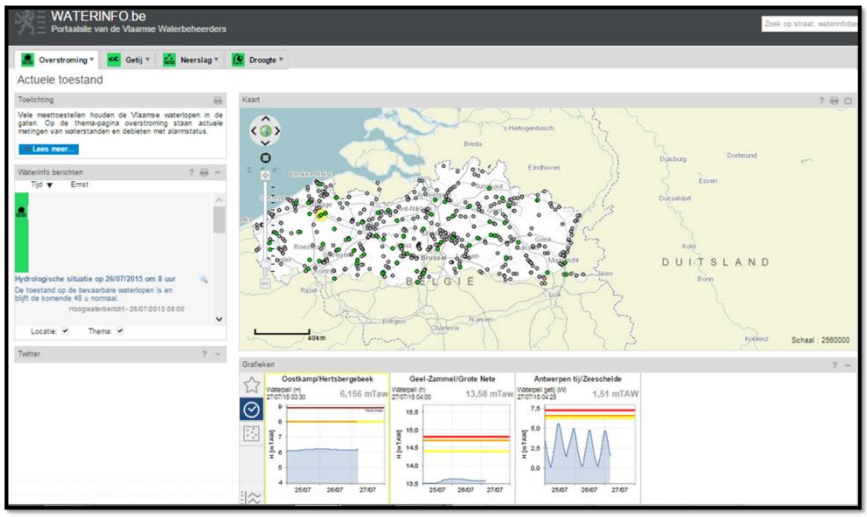

Figure 9: Interface of the WaterInfo Portal

This data has been used to integrate specific water domain standards (WaterML) and generic measurement services (SOS) into more mature geospatial standards (WPS, WFS). The case study has been a pilot to design, implement and test this integration process. The case study has generated interesting recommendations for future works in the area of standardization and interoperability, explained more in detail in D5.4 Interoperability recommendations report.

Conclusions and recommendations

The Scheldt case study has contributed positively to the design, development and implementation of the virtual Marketplace and its supporting tools and services. This has taken the form of:

- Early discussions to determine the main challenges in the river basin and inform the selection and screening of potentially relevant products for the Marketplace
- Input to the development of the functionality and desired content of the Marketplace
- Attendance at stakeholder meetings, interviews and e-Pitch event which resulted in:

    - Expressions of interest in a number of tools from the first cohort identified and disseminated during the project to date
    - Input to the style and nature of the e-learning materials
    - Input to the interoperability experiment
    - Initiation of dialogue between Scheldt and Maritsa basin stakeholders, sharing of knowledge and generation of insights for both parties.
    - As ‘first users’, provision of a review of Marketplace prototype, and provision of feedback on usability and content.

Overall, it can be seen that the Scheldt stakeholders already have access to a significant amount of information, platforms and tools but have used their experience to provide insights that have added value to the development of the WaterInnEU marketplace. Conversely, the same level of experience and access to existing information meant that the general response and engagement of Scheldt stakeholders to this project has been less than expected. This was especially true for the stakeholders from The Netherlands. It was harder to make the case that there was ‘added value’ over and above their existing sources. Out of the 34 institutions listed above, only 5 have actively participated in the project. One of them is the International Scheldt Commission, which includes all Scheldt stakeholders, but despite significant effort at communication and outreach, the

level of direct engagement of the wider community was disappointing. It may be anticipated that this scenario may also be replicated in several of the other more mature markets across Northern Europe. In contrast, the potential value for the less developed markets in southern and eastern Europe is likely to be more readily accepted, as was seen in Maritsa. This in itself is an important insight for the future development of the Marketplace.

The WaterInnEU project is responding to this issue of potential stakeholder fatigue by designing a platform which focusses on providing succinct but relevant information about pre-screened (high quality and highly relevant) tools, enabling better communication between stakeholders and providing targeted support services for both tool developers and end users.

Pre-screening of products and services before they are listed on the Marketplace is an important mechanism for enhancing trust, and encouraging new potential users to join the platform. For pre-screening to be effective however, the users should also trust the pre-screening process itself. It is important to communicate that the Marketplace is seeking to accelerate products and services of potential relevance to RBM in the widest sense, and not to be too prescriptive in term of potential relevance as this will vary by geography. Going forward, trust in the platform will be further enhanced by the inclusion of successful case studies and feedback from the end-users.

In addition, it would be beneficial to encourage EU funded projects offering a platform for innovation in the water sector to join forces where possible, and give continuity to the promotion and dissemination of new tools, as well as bridging the gap between science and policy further.